PATENT SPECIFICATION 953,318

DRAWINGS ATTACHED.

953,318

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COMPLETE SPECIFICATION.

Improvements relating to the Production of Thermoplastic Packages or Containers.

We, JOHN WADDINGTON LIMITED, a British Company, of Waddington's Printing Works, Wakefield Road, Leeds 10, Yorkshire, and JOHN MALCOM BANKS, a British Subject, of the Company's address, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to the production of thermoplastic packages or containers and concerns more specifically the provision of means for producing an opening or outlet in the cap or lid or elsewhere for affording access to the contents by insertion of a drinking straw or for pouring or sprinkling out the contents, such means (if desired) serving alternatively as a re-closure or as an opening device.

It has been proposed to produce caps or lids for such packages or containers from thermoplastic sheet or film with thinned indentations or locally weakened areas which can readily be pierced to give access to the contents (see our pending Application No. 2196/59) (Serial No. 949,604).

According to the present invention thermoplastic packages, containers or lids therefor have combined therewith a tab, provided with a projection, and a depression or weakened portion, the said tab being adapted to be moved into mesh or engagement with the said depression or weakened portion in a manner whereby upon pressure being applied to the tab the projection pierces or ruptures the depression or weakened portion.

There are many ways of applying the invention to plastic packages, containers or to lids associated therewith, and in order that the invention may be fully and clearly comprehended the same will now be described with reference to the accompanying drawings, in which:—

Figure 1 is an axial section of a fragmental portion of a container and lid therefor, constructed according to one embodiment of the invention.

Figure 2 is a similar view to Figure 1 of a modification of the invention.

In both figures similar numerals refer to similar parts and the thickness of the thermoplastic material of which the parts are formed has been exaggerated for the sake of clarity.

It will be observed on referring to Figure 1, that the piercing member 1 is formed upon a tab or extension piece 2 integral or combined with a lid or closure member 3 of a container 4, the said member 1 being of conical or pointed contour.

Because of the flexible nature of the material of which the tab and lid are constructed, the tab is capable of pivotal movement relative to the lid so that from the inoperative position it occupies in the drawing the tab 2 may be swung or manipulated to a position for the member 1 to mesh with an inverted conical depression 5 formed in the body of the lid.

The relative depth of the depression 5 and the height of the member 1 are such that when the latter has meshed with the former as aforesaid, pressure applied to the tab in the vicinity of the member 1 causes the apex of the member to pierce or rupture the base of the depression and thus provide an aperture for the insertion of a straw, pourer or for otherwise affording access to the interior of the container 4.

The heretofore described construction of combined or composite lid may be achieved by taking a thermoplastic sheet or film and subjecting it to the action of appropriate moulds and dies and/or by vacuum (suc-

tion) for the simultaneous formation of both piercing member 1 and tab 2 and the lid 3 and depression 5.

It must however be understood that the tab and piercing member may be constructed as a separate entity and thereafter attached to a lid, package or container by adhesive or in any other suitable manner.

In a still further alternative the depression and the piercing tab may form part of a container. Or the depression may be formed in either a lid or in a container, and the coacting piercing tab form part of the container or the lid, whichever should prove most convenient to a user or a manufacturer.

By employing correctly designed moulds and dies and/or the use of vacuum in the formation of the piercing member 1 and the coacting depression 5, the apex of the member 1 may be thicker than the rest of the member. Similarly, the base of the depression 5 may be thinner. Consequently, the piercing or rupturing action may be eased or facilitated.

In lieu of the aforesaid depression, a simple weakened or thinner area for piercing may be provided as is illustrated in Figure 2 of the drawings.

The embodiment of the invention shown in Figure 2 will be seen to employ a piercing member 1 of pointed and bulbous or waisted shape so that when the weakened portion 5 has been pierced or ruptured as and for the reason already set forth, the bulbous portion may serve as a re-closure member or stopper following initial piercing of the weakened part.

WHAT WE CLAIM IS:—

1. A thermoplastic package, container or a lid therefor, having combined therewith a tab, provided with a projection, and a depression or weakened portion, the said tab adapted to be moved into mesh or engagement with the said depression or weakened portion in a manner whereby upon pressure being applied to the tab the projection pierces or ruptures the depression or weakened portion.

2. A thermoplastic package, container, or a lid therefor according to Claim 1, wherein the projection on the tab is thickened at its outer end.

3. A thermoplastic package, container or a lid therefor according to Claim 1, or Claim 2 wherein the base of the depression is weakened by a reduction in thickness.

4. A thermoplastic package, container or a lid therefor according to any one of the preceding claims, wherein the tab is hinged or pivotally attached to or formed integral with the package or with the lid.

5. A thermoplastic package, container or a lid therefor according to any one of the preceding claims, wherein the projection is of pointed and bulbous, waisted or other suitable shape adapted to serve as a re-closure member, subsequent to initial piercing or rupturing of the depression or weakened portion.

6. A thermoplastic package, container or a lid, therefor constructed, arranged and adapted to function as herein set forth with reference to the accompanying drawings.

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953318 COMPLETE SPECIFICATION
1 SHEET This drawing is a reproduction of the Original on a reduced scale

Fig. 1.

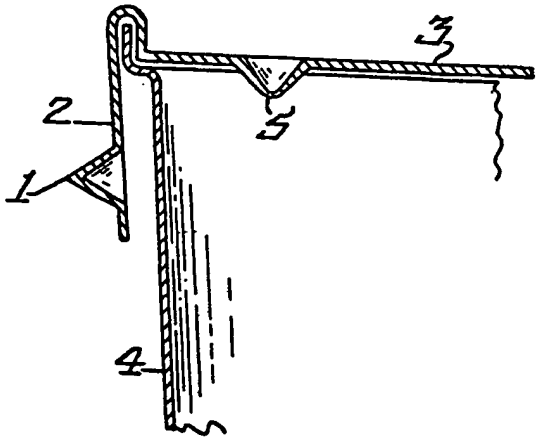

Fig. 2.